

CONTENTS OF VOLUME 149

Appreciation list		
	1	In Appreciation
General papers		
Y. Enoki, Y. Ohga, H. Ishidate and T. Morimoto	11	Primary structure of myoglobins from 31 species of birds
J.O. Ortiz, M. Rodríguez-Lanetty and J. Bubis	22	Purification and characterization of transducin from capybara <i>Hydrochoerus</i> hydrochaeris
S. Miura, S. Nakamura, Y. Kobayashi, F. Piferrer and M. Nakamura	29	Differentiation of ambisexual gonads and immunohistochemical localization of P450 cholesterol side-chain cleavage enzyme during gonadal sex differentiation in the protandrous anemonefish, <i>Amphiprion clarkii</i>
S. Iwai, L. Thi Dieu Trang, H. Sehadova and M. Takeda	38	Expression analyses of casein kinase 2α and casein kinase 2β in the silkmoth, Bombyx mori
S. Moriyama, K. Yamaguchi, T. Takasawa, H. Chiba and H. Kawauchi	47	Identification of two insulin-like growth factor IIs in the Japanese eel, Anguilla japonica: Cloning, tissue distribution, and expression after growth hormone treatment and seawater acclimation
Y. Han, H. Yu, X. Yang, H.H. Rees, J. Liu and R. Lai	58	A serine proteinase inhibitor from frog eggs with bacteriostatic activity
C.P. Cutler and G. Cramb	63	Differential expression of absorptive cation-chloride-cotransporters in the intestinal and renal tissues of the European eel (Anguilla anguilla)
L.A. Milligan, S.I. Rapoport, M.R. Cranfield, W. Dittus, K.E. Glander, O.T. Oftedal, M.L. Power, C.A. Whittier and R.P. Bazinet	74	Fatty acid composition of wild anthropoid primate milks
Zy. Liu, Z. Wang and J. Zhang	83	An acidic protease from the grass carp intestine (Ctenopharyngodon idellus)
C.Y. Choi and K.W. An	91	Cloning and expression of Na ⁺ /K ⁺ -ATPase and osmotic stress transcription factor 1 mRNA in black porgy, <i>Acanthopagrus schlegeli</i> during osmotic stress
Y. Nishiki, T. Kono, K. Fukao, K. Sato, K. Takahashi, M. Toyomizu and Y. Akiba	101	Nitric oxide (NO) is involved in modulation of non-insulin mediated glucose transport in chicken skeletal muscles
K.A. Daly, C. Lefévre, K. Nicholas, E. Deane and P. Williamson	108	Characterization and expression of Peroxiredoxin 1 in the neonatal tammar wallaby (Macropus eugenii)
H. Kawasaki, S. Iwamuro, Y. Goto, P.F. Nielsen and J.M. Conlon	120	Characterization of a hemolytic protein, identified as histone H4, from the skin of the Japanese tree frog <i>Hyla japonica</i> (Hylidae)

Contents of volume

S.G. Lynn, W.J. Birge and B.S. Shepherd	126	Molecular characterization and sex-specific tissue expression of estrogen receptor α (esr1), estrogen receptor β a (esr2a) and ovarian aromatase (cyp19a1a) in yellow perch (Perca flavescens)
L.E. Schaufler, J.J. Vollenweider and A. Moles	148	Changes in the lipid class and proximate compositions of coho salmon (Oncorhynchus kisutch) smolts infected with the nematode parasite Philonema agubernaculum
B. Dojnov, N. Božić, V. Nenadović, J. Ivanović and Z. Vujčić	153	Purification and properties of midgut α -amylase isolated from <i>Morimus funereus</i> (Coleoptera: Cerambycidae) larvae
Y. Niimura and Ki. Nagai	161	Metabolic responses of sulfatide and related glycolipids in Madin-Darby canine kidney (MDCK) cells under osmotic stresses
K. Yamaura, K.G. Takahashi and T. Suzuki	168	Identification and tissue expression analysis of C-type lectin and galectin in the Pacific oyster, Crassostrea gigas
Q. Wang, K. Chen, Q. Yao, Y. Zhao, Y. Li, H. Shen and R. Mu	176	Identification and characterization of a novel 1-Cys peroxiredoxin from silkworm, Bombyx mori
B.Y. Kim, H.J. Kim, K.S. Lee, S.J. Seo and B.R. Jin	183	Catalase from the white-spotted flower chafer, <i>Protaetia brevitarsis</i> : cDNA sequence, expression, and functional characterization
M. Wu, A. Chaudhary, I.A. Khan and A.K. Dasmahapatra	191	Ethanol teratogenesis in Japanese medaka: Effects at the cellular level
É. Hébert Chatelain, S. Breton, H. Lemieux and P.U. Blier	202	Epitoky in Nereis (Neanthes) virens (Polychaeta: Nereididae): A story about sex and death
C.E. Rosa, M.A. Figueiredo, C.F.C. Lanes, D.V. Almeida, J.M. Monserrat and L.F. Marins	209	Metabolic rate and reactive oxygen species production in different genotypes of GH-transgenic zebrafish
	I	Call for Papers: 6th ISFE 2008
	II	Call for Papers: SEB Annual Main Meeting, Marseille - 2008
The Market Control		Vol. 149B, No. 2
Review B. Moussian	215	The role of GlcNAc in formation and function of extracellular matrices
General papers	213	The fole of Gietvae in formation and function of extracential matrices
N. Birukawa, H. Ando, M. Goto, N. Kanda, L.A. Pastene and A. Urano	227	Molecular cloning of urea transporters from the kidneys of baleen and toothed whales
K. Batista de Morais, K. Fernandes Grego and A. Mitico Tanaka-Azevedo	236	Identification of proteins similar to <i>Bothrops jararaca</i> coagulation inhibitor (BjI) in the plasmas of <i>Bothrops alternatus</i> , <i>Bothrops jararacussu</i> and <i>Crotalus durissus terrificus</i> snakes
V. Ventrella, M. Pirini, A. Pagliarani, F. Trombetti, M.P. Manuzzi and A.R. Borgatti	241	Effect of temporal and geographical factors on fatty acid composition of <i>M. galloprovincialis</i> from the Adriatic sea
M. Singh, L.D. Hodges, P.F.A. Wright, D.M.Y. Cheah, P.M. Wynne, N. Kalafatis and T.A. Macrides	251	The CO ₂ -SFE crude lipid extract and the free fatty acid extract from <i>Perna</i> canaliculus have anti-inflammatory effects on adjuvant-induced arthritis in rats

P. Kovács, É. Pállinger and G. Csaba	259	Effect of hexamethylene bisacetamide (HMBA) on the microtubular system of Tetrahymena pyriformis
S.G. Dugan, X. Chen, J.G. Nickerson, C.J. Montpetit and T.W. Moon	265	Regulation of the black bullhead hepatic β-adrenoceptors
S. Feng, W. Li and H. Lin	275	Characterization and expression of the pepsinogen C gene and determination of pepsin-like enzyme activity from orange-spotted grouper (<i>Epinephelus coioides</i>)
M. Sanosaka, T. Minashima, K. Suzuki, K. Watanabe, S. Ohwada, A. Hagino, M.T. Rose, T. Yamaguchi and H. Aso	285	A combination of octanoate and oleate promotes <i>in vitro</i> differentiation of porcine intramuscular adipocytes
M. Narváez, L. Freites, M. Guevara, J. Mendoza, H. Guderley, C.J. Lodeiros and G. Salazar	293	Food availability and reproduction affects lipid and fatty acid composition of the brown mussel, <i>Perna perna</i> , raised in suspension culture
DM. Ma, HP. Zhu and JF. Gui	303	Ectopic Six3 expression in the dragon eye goldfish
A. Kampkötter, C. Timpel, R.F. Zurawski, S. Ruhl, Y. Chovolou, P. Proksch and W. Wätjen	314	Increase of stress resistance and lifespan of Caenorhabditis elegans by quercetin
S. Shini, P. Kaiser, A. Shini and W.L. Bryden	324	Biological response of chickens (Gallus gallus domesticus) induced by corticosterone and a bacterial endotoxin
M. Manchado, C. Infante, E. Asensio, A. Crespo, E. Zuasti and J.P. Cañavate	334	Molecular characterization and gene expression of six trypsinogens in the flatfish Senegalese sole (<i>Solea senegalensis</i> Kaup) during larval development and in tissues
L. Zhang, D. Lin, Y. Zhang, G. Ma and W. Zhang	345	A homologue of Sox11 predominantly expressed in the ovary of the orange-spotted grouper <i>Epinephelus coioides</i>
N. Wang, YH. Lee and J. Lee	354	Recombinant perlucin nucleates the growth of calcium carbonate crystals: Molecular cloning and characterization of perlucin from disk abalone, <i>Haliotis discus discus</i>
V.I. Lushchak, V.V. Husak and K.B. Storey	362	Regulation of AMP-deaminase activity from white muscle of common carp Cyprinus carpio
F.A. Juola, K. McGraw and D.C. Dearborn	370	Carotenoids and throat pouch coloration in the great frigatebird (Fregata minor)
SY. Wang, Yan Tao, CS. Liang, H. Fukushima and S. Watabe	378	cDNA cloning and characterization of temperature-acclimation-associated light meromyosins from grass carp fast skeletal muscle
J. Chen, L. Yuan, M. Sun, L. Zhang and S. Zhang	388	Screening of hibernation-related genes in the brain of <i>Rhinolophus ferrumequinum</i> during hibernation
Y. Kitani, N. Kikuchi, G. Zhang, S. Ishizaki, K. Shimakura, K. Shiomi and Y. Nagashima	394	Antibacterial action of L-amino acid oxidase from the skin mucus of rockfish Sebastes schlegelii

- I Call for Papers: 6th ISFE 2008
- II Call for Papers: SEB Annual Main Meeting, Marseille 2008

General papers		
N.A. Jennings, L. Pezzementi, A.L. Lawrence and S.A. Watts	401	Acetylcholinesterase in the sea urchin <i>Lytechinus variegatus</i> : Characterization and developmental expression in larvae
M. Mahawar and P. Joshi	410	Goat vitronectin: Characterization and binding to Staphylococcus aureus
O. Opota, JF. Charles, S. Warot, D. Pauron and I. Darboux	419	Identification and characterization of the receptor for the <i>Bacillus sphaericus</i> binary toxin in the malaria vector mosquito, <i>Anopheles gambiae</i>
A. Bermejo-Nogales, L. Benedito-Palos,A. Saera-Vila, J.A. Calduch-Giner,A. Sitjà-Bobadilla and J. Pérez-Sánchez	428	Confinement exposure induces glucose regulated protein 75 (GRP75/mortalin/mtHsp70/PBP74/HSPA9B) in the hepatic tissue of gilthead sea bream (<i>Sparus aurata</i> L.)
R. Hristova, A. Dolashki, W. Voelter, S. Stevanovic and P. Dolashka-Angelova	439	o-Diphenol oxidase activity of molluscan hemocyanins
N. Senthil Kumar, B. Tang, X. Chen, H. Tian and W. Zhang	447	Molecular cloning, expression pattern and comparative analysis of chitin synthase gene B in <i>Spodoptera exigua</i>
N. Božić, J. Ivanović, V. Nenadović, J. Bergström, T. Larsson and Z. Vujčić	454	Purification and properties of major midgut leucyl aminopeptidase of <i>Morimus funereus</i> (Coleoptera, Cerambycidae) larvae
D.C. McFarland and J.E. Pesall	463	Phospho-MAPK as a marker of myogenic satellite cell responsiveness to growth factors
X. Li, T. Lei, T. Xia, X. Chen, S. Feng, H. Chen, Z. Chen, Y. Peng and Z. Yang	468	Molecular characterization, chromosomal and expression patterns of three aquaglyceroporins (AQP3, 7, 9) from pig
V.A. Funk, R.W. Olafson, M. Raap, D. Smith, L. Aitken, J.D. Haddow, D. Wang, J.A. Dawson-Coates, R.D. Burke and K.M. Miller	477	Identification, characterization and deduced amino acid sequence of the dominant protease from <i>Kudoa paniformis</i> and <i>K. thyrsites</i> : A unique cytoplasmic cysteine protease
H. Guderley, D.R. Joanisse, S. Mokas, G.M. Bilodeau and T. Garland Jr.	490	Altered fibre types in gastrocnemius muscle of high wheel-running selected mice with mini-muscle phenotypes
K. Hashimoto, Y. Yamano and I. Morishima	501	Induction of tyrosine hydroxylase gene expression by bacteria in the fat body of eri-silkworm, Samia cynthia ricini
S. Maeda, A. Nakashima, R. Yamada, N. Hara, Y. Fujimoto, Y. Ito and H. Sonobe	507	Molecular cloning of ecdysone 20-hydroxylase and expression pattern of the enzyme during embryonic development of silkworm <i>Bombyx mori</i>
O. Mittapalli and R.H. Shukle	517	Molecular characterization and responsive expression of a defender against apoptotic cell death homologue from the Hessian fly, Mayetiola destructor
K.A. Daly, M.R. Digby, C. Lefévre, K.R. Nicholas, E.M. Deane and P. Williamson	524	Identification, characterization and expression of cathelicidin in the pouch young of tammar wallaby (Macropus eugenii)
Kwang Wook An, H.S. Shin and C.Y. Choi	534	Physiological responses and expression of metallothionein (MT) and superoxide dismutase (SOD) mRNAs in olive flounder, <i>Paralichthys olivaceus</i> exposed to benzo[a]pyrene
Erratum		
A. Cohen, K. Klasing and R. Ricklefs	540	Erratum to "Measuring circulating antioxidants in wild birds" [Comp. Biochem. Physiol. 147B (2007) 110–121]

- I Call for Papers: 6th ISFE 2008
- II Call for Papers: SEB Annual Main Meeting, Marseille 2008

General	nanors
General	pupers

CM. Kao and FL. Huang	541	Cloning and expression of carp cathepsin Z: Possible involvement in yolk metabolism
P. Heredia-Middleton, J. Brunelli, R.E. Drew and G.H. Thorgaard	552	Heat shock protein (HSP70) RNA expression differs among rainbow trout (Oncorhynchus mykiss) clonal lines
Z. Liu, H. Liu, X. Liu and X. Wu	557	Purification and cloning of a novel antimicrobial peptide from salivary glands of the hard tick, <i>Ixodes sinensis</i>
T.G. Ramsay and A.D. Mitchell	562	Impact of dietary protein content on uncoupling protein mRNA abundance in swine
M. Samel, K. Tõnismägi, G. Rönnholm, H. Vija, J. Siigur, N. Kalkkinen and E. Siigur	572	L-Amino acid oxidase from Naja naja oxiana venom
X. Zhang, N.B. Griko, S.K. Corona and L.A. Bulla Jr.	581	Enhanced exocytosis of the receptor BT-R ₁ induced by the Cry1Ab toxin of Bacillus thuringiensis directly correlates to the execution of cell death
B.J. Kang, T. Nanri, J.M. Lee, H. Saito, CH. Han, M. Hatakeyama and M. Saigusa	589	Vitellogenesis in both sexes of gonochoristic mud shrimp, <i>Upogebia major</i> (Crustacea): Analyses of vitellogenin gene expression and vitellogenin processing
M.C.L. Nascimento-Silva, A.T. Leal, S. Daffre, L. Juliano, I. da Silva Vaz Jr., G. de O. Paiva-Silva, P.L. Oliveira and M.H.F. Sorgine	599	BYC, an atypical aspartic endopeptidase from Rhipicephalus (Boophilus) microplus eggs
X. Lu, Y. Ma, J. Wu and R. Lai	608	Two serine protease inhibitors from the skin secretions of the toad, Bombina microdeladigitora
P. Soppela, S. Saarela, U. Heiskari and M. Nieminen	613	The effects of wintertime undernutrition on plasma leptin and insulin levels in an arctic ruminant, the reindeer
E.C.C. Silva, D.C. Masui, R.P.M. Furriel, F.L.M. Mantelatto, J.C. McNamara, H. Barrabin, F.A. Leone, H.M. Scofano and C.F.L. Fontes	622	Regulation by the exogenous polyamine spermidine of Na,K-ATPase activity from the gills of the euryhaline swimming crab <i>Callinectes danae</i> (Brachyura, Portunidae)
M. De Zoysa, W.A. Pushpamali, I. Whang, S.J. Kim and J. Lee	630	Mitochondrial thioredoxin-2 from disk abalone (<i>Haliotis discus discus</i>): Molecular characterization, tissue expression and DNA protection activity of its recombinant protein
O. Wellman-Labadie, J. Picman and M.T. Hincke	640	Antimicrobial activity of the Anseriform outer eggshell and cuticle
	I	Contents of Volume 149
	VI	Subject Index

Author Index

IX

General papers		
N.A. Jennings, L. Pezzementi, A.L. Lawrence and S.A. Watts	401	Acetylcholinesterase in the sea urchin <i>Lytechinus variegatus</i> : Characterization and developmental expression in larvae
M. Mahawar and P. Joshi	410	Goat vitronectin: Characterization and binding to Staphylococcus aureus
O. Opota, JF. Charles, S. Warot, D. Pauron and I. Darboux	419	Identification and characterization of the receptor for the <i>Bacillus sphaericus</i> binary toxin in the malaria vector mosquito, <i>Anopheles gambiae</i>
A. Bermejo-Nogales, L. Benedito-Palos,A. Saera-Vila, J.A. Calduch-Giner,A. Sitjà-Bobadilla and J. Pérez-Sánchez	428	Confinement exposure induces glucose regulated protein 75 (GRP75/mortalin/mtHsp70/PBP74/HSPA9B) in the hepatic tissue of gilthead sea bream (<i>Sparus aurata</i> L.)
R. Hristova, A. Dolashki, W. Voelter, S. Stevanovic and P. Dolashka-Angelova	439	o-Diphenol oxidase activity of molluscan hemocyanins
N. Senthil Kumar, B. Tang, X. Chen, H. Tian and W. Zhang	447	Molecular cloning, expression pattern and comparative analysis of chitin synthase gene B in <i>Spodoptera exigua</i>
N. Božić, J. Ivanović, V. Nenadović, J. Bergström, T. Larsson and Z. Vujčić	454	Purification and properties of major midgut leucyl aminopeptidase of <i>Morimus funereus</i> (Coleoptera, Cerambycidae) larvae
D.C. McFarland and J.E. Pesall	463	Phospho-MAPK as a marker of myogenic satellite cell responsiveness to growth factors
X. Li, T. Lei, T. Xia, X. Chen, S. Feng, H. Chen, Z. Chen, Y. Peng and Z. Yang	468	Molecular characterization, chromosomal and expression patterns of three aquaglyceroporins (AQP3, 7, 9) from pig
V.A. Funk, R.W. Olafson, M. Raap, D. Smith, L. Aitken, J.D. Haddow, D. Wang, J.A. Dawson-Coates, R.D. Burke and K.M. Miller	477	Identification, characterization and deduced amino acid sequence of the dominant protease from <i>Kudoa paniformis</i> and <i>K. thyrsites</i> : A unique cytoplasmic cysteine protease
H. Guderley, D.R. Joanisse, S. Mokas, G.M. Bilodeau and T. Garland Jr.	490	Altered fibre types in gastrocnemius muscle of high wheel-running selected mice with mini-muscle phenotypes
K. Hashimoto, Y. Yamano and I. Morishima	501	Induction of tyrosine hydroxylase gene expression by bacteria in the fat body of eri-silkworm, Samia cynthia ricini
S. Maeda, A. Nakashima, R. Yamada, N. Hara, Y. Fujimoto, Y. Ito and H. Sonobe	507	Molecular cloning of ecdysone 20-hydroxylase and expression pattern of the enzyme during embryonic development of silkworm <i>Bombyx mori</i>
O. Mittapalli and R.H. Shukle	517	Molecular characterization and responsive expression of a defender against apoptotic cell death homologue from the Hessian fly, Mayetiola destructor
K.A. Daly, M.R. Digby, C. Lefévre, K.R. Nicholas, E.M. Deane and P. Williamson	524	Identification, characterization and expression of cathelicidin in the pouch young of tammar wallaby (Macropus eugenii)
Kwang Wook An, H.S. Shin and C.Y. Choi	534	Physiological responses and expression of metallothionein (MT) and superoxide dismutase (SOD) mRNAs in olive flounder, <i>Paralichthys olivaceus</i> exposed to benzo[a]pyrene
Erratum		
A. Cohen, K. Klasing and R. Ricklefs	540	Erratum to "Measuring circulating antioxidants in wild birds" [Comp. Biochem. Physiol. 147B (2007) 110–121]

- I Call for Papers: 6th ISFE 2008
- II Call for Papers: SEB Annual Main Meeting, Marseille 2008

General	naners
00,,00	Pupus

CM. Kao and FL. Huang	541	Cloning and expression of carp cathepsin Z: Possible involvement in yolk metabolism
P. Heredia-Middleton, J. Brunelli, R.E. Drew and G.H. Thorgaard	552	Heat shock protein (HSP70) RNA expression differs among rainbow trout (Oncorhynchus mykiss) clonal lines
Z. Liu, H. Liu, X. Liu and X. Wu	557	Purification and cloning of a novel antimicrobial peptide from salivary glands of the hard tick, <i>Ixodes sinensis</i>
T.G. Ramsay and A.D. Mitchell	562	Impact of dietary protein content on uncoupling protein mRNA abundance in swine
M. Samel, K. Tõnismägi, G. Rönnholm, H. Vija, J. Siigur, N. Kalkkinen and E. Siigur	572	L-Amino acid oxidase from Naja naja oxiana venom
X. Zhang, N.B. Griko, S.K. Corona and L.A. Bulla Jr.	581	Enhanced exocytosis of the receptor BT-R ₁ induced by the Cry1Ab toxin of Bacillus thuringiensis directly correlates to the execution of cell death
B.J. Kang, T. Nanri, J.M. Lee, H. Saito, CH. Han, M. Hatakeyama and M. Saigusa	589	Vitellogenesis in both sexes of gonochoristic mud shrimp, <i>Upogebia major</i> (Crustacea): Analyses of vitellogenin gene expression and vitellogenin processing
M.C.L. Nascimento-Silva, A.T. Leal, S. Daffre, L. Juliano, I. da Silva Vaz Jr., G. de O. Paiva-Silva, P.L. Oliveira and M.H.F. Sorgine	599	BYC, an atypical aspartic endopeptidase from Rhipicephalus (Boophilus) microplus eggs
X. Lu, Y. Ma, J. Wu and R. Lai	608	Two serine protease inhibitors from the skin secretions of the toad, Bombina microdeladigitora
P. Soppela, S. Saarela, U. Heiskari and M. Nieminen	613	The effects of wintertime undernutrition on plasma leptin and insulin levels in an arctic ruminant, the reindeer
E.C.C. Silva, D.C. Masui, R.P.M. Furriel, F.L.M. Mantelatto, J.C. McNamara, H. Barrabin, F.A. Leone, H.M. Scofano and C.F.L. Fontes	622	Regulation by the exogenous polyamine spermidine of Na,K-ATPase activity from the gills of the euryhaline swimming crab <i>Callinectes danae</i> (Brachyura, Portunidae)
M. De Zoysa, W.A. Pushpamali, I. Whang, S.J. Kim and J. Lee	630	Mitochondrial thioredoxin-2 from disk abalone (<i>Haliotis discus discus</i>): Molecular characterization, tissue expression and DNA protection activity of its recombinant protein
O. Wellman-Labadie, J. Picman and M.T. Hincke	640	Antimicrobial activity of the Anseriform outer eggshell and cuticle
	I	Contents of Volume 149
	VI	Subject Index
	IX	Author Index

SUBJECT INDEX

Vol. 149B, Nos. 1-4

Abalone, 354, 630 Acetylated tubulin, 259 Acetylcholine, 401 Acetylcholinesterase, 401 Acidic protease, 83 Adipocyte, 285 Adipogenesis, 285

Adjuvant arthritis, 251 β-adrenoceptor, 265 Adriatic sea, 241 Aerobic capacity, 490

Alcohol, 191 Ambisexual gonads, 29

Amino acid, 11

L-Amino acid oxidase, 572 AMP-deaminase, 362 Amphibian, 58, 608

Anemonefish, 29 Anopheles gambiae, 419

Anthropoid, 74

Anti-inflammatory, 251
Antibacterial action, 394
Antibacterial activity, 572
Antibacterial protein, 394
Antimicrobial, 120, 640
Antimicrobial peptides, 524

Antioxidant, 176, 630 Antioxidant enzyme, 183

aP2, 285 AQP3, 468 AQP7, 468 AQP9, 468

Aquaglyceroporin, 468

Arctic, 613

Artificial selection, 490 Aspartic endopeptidases, 599

Astaxanthin, 370

Bacillus sphaericus, 419
Bacillus thuringiensis, 581
Bacterial cell binding activit

Bacterial cell binding activity, 394

Benzo[a]pyrene, 534
Binary toxin, 419
Biopesticide, 419
Bird, 11
Bivalves, 293
Black porgy, 91
Blood coagulation, 236
Body weight, 613

Bombina microdeladigitora, 608 Bombyx mori, 38, 176, 507 Bothrops jararaca, 236 BT-R₁, 581 Bumetanide, 63

C/EBPalpha, 285 C-type lectin, 168 Cadherin, 581

Caenorhabditis elegans, 314 Calcium carbonate crystals, 354

Callinectes danae, 622

Capybaras, 22

Carotenoid pigments, 370

Carp, 541

casein kinase 2α, 38 casein kinase 2β, 38 Catalase, 183

Catalytic mechanism, 599 Catecholamines, 265 Cathelicidin, 524

Cathepsin L protease, 477

Cathepsin Z, 541

Cation-chloride cotransporter, 63

cDNA, 447

cDNA cloning, 47, 378 cDNA subtraction, 388

Cell death, 581

Cerambycid beetle, 153, 454

Ceramide, 161

Cerebroside sulfotransferase gene, 161

Cetaceans, 227 Chicken, 101 Chickens, 324

Chitin synthase gene B, 447

Circadian clock, 38

Cloning, 126, 227, 447, 468

Color signals, 370 Cortical granule, 541 Corticosterone, 324 Crassostrea gigas, 168 Crotalinae, 236 Cry toxin, 581

Cuticle, 640 Cyprinus carpio, 362

1-Cys peroxiredoxins (1-Cys Prx), 176

Cytochrome P450, 507 Cytoskeleton, 259

DAF-16 lifespan, 314

Defender against apoptotic death (DAD1),

517

Defensive, 58

Deoxy-glucose uptake, 101 Development, 191, 275 Diapause, 38

Digestive gland, 168

o-Diphenoloxidase activity, 439

Diuretics, 63 DNA, 191 Drosophila, 215

Ecdysone 20-hydroxylase, 507

Ecdysteroid-phosphate phosphatase (EPPase),

507 Egg, 58

Eggshell, 640 Electron microscopy, 394

Embryogenesis, 345
Embryonic myoblast, 463
Environmental parameters, 293
Epinephelus coioides, 275, 345

Epitoky, 202 Eri-silkworm, 501

Euryhaline swimming crab, 622

Exercise physiology, 490

Exocytosis, 581

Experimental evolution, 490

Expression, 447

Expression pattern, 468 Extracellular matrix, 215

Extract, 83

Eye development, 303

Fast skeletal muscle, 378

Fatty acid, 74
Fatty acids, 241, 293
Feed intake, 613

Fertilization envelope, 541 Fish, 126, 265, 428

Fish, 126, 265, 428 Fish clonal lines, 552 Flutax-1, 259 Free fatty acids, 148 Frog skin, 120

G-protein-coupled signaling, 22

Galectin, 168

Gene expression, 334, 589 Genomic DNA, 447

Gill microsomes, 622

GlcNAc, 215 Glucose transport, 101

Glucosyl ceramide sulfate, 161

Glutamate-cysteine ligase catalytic subunit,

209

Glycobiology, 215 Glycolipid, 161 Glycosyltransferase, 215 Goldfish (*C. auratus*), 303 Grass carp, 83, 378 Growth, 47 Growth factors, 463 Growth hormone, 47, 209

Haliotis discus discus, 354 Heat shock proteins, 428 Heat shock response, 552 Helix vulgaris hemocyanin, 439 Hemolytic, 120 Hessian fly, 517 Hibernation, 388 Histone H4, 120 HMBA, 259 Homeobox, 303 Hormone, 126 HPLC, 370 HSP70, 552 Human disease, 215 Hydrochoerus hydrochaeris, 22 Hydrogen peroxide, 183, 394 Hydropathy profile, 11 Hydrophilicity, 378 Hyla japonica, 120 Hypoosmotic stress, 91

Immune response, 324
Immunofluorescence localization, 303
Immunohistochemistry, 29
In situ hybridization, 168
Induction of gene expression, 501
Insect, 183
Insect immunity, 501
Insulin, 101, 613
Insulin-like growth factor-II, 47
Intestine, 83
Intramuscular preadipocyte, 285
Isoform, 153, 454

Japanese eel, 47 Japanese medaka, 191

K. paniformis, 477 Kidney, 227 kinetic constants, 439 Kinetics, 362 Kudoa thyrsites, 477

L-Amino acid oxidase, 394
Larvae, 401
Larval development, 334
Leptin, 613
Leucyl aminopeptidase, 454
Lipid class, 148
Lipid metabolism, 562
Lipids, 293
Lipopolysaccharide (LPS), 324
Liver, 265
Lytechinus variegatus, 401

Mammal, 11
MAPK, 463
Mapping, 468
Marsupial, 108
Marsupials, 524
MDCK cell, 161
Melanization, 501
L-meromyosin, 378
Metabolism, 202
Metallothionein, 534
17α-methyltestosterone, 345
Midgut, 447, 454
Midgut α-amylase, 153
Milk composition, 74

Mitochondria, 630 Monohexosyl ceramides, 161 Morimus funereus, 153, 454 mRNA expression, 47, 63, 345, 507, 517,

Mud shrimp, 589 Multimerization, 410

Muscle, 463

Muscle metabolic capacities, 490

Myoglobin, 11 Myoliquefaction, 477 Myosin, 378

Mytilus galloprovincialis, 241

Myxosporean, 477

n-3/n-6 ratio, 241 n-3 PUFA, 241 Na⁺/K⁺-ATPase, 91 Na,K-ATPase, 622 *Naja naja oxiana*, 572 NCC (Sodium chloride

NCC (Sodium chloride cotransporter), 63

Neonate, 108, 524 Nereis virens, 202 Nitric oxide, 101

NKCC (Sodium potassium chloride cotrans-

porter), 63 Nutrition, 401

Octanoate, 285
Oleate, 285
Olive flounder, 534
Oncorhynchus mykiss, 552
Oocyte maturation, 541
Orange-spotted grouper, 345
Osmoregulation, 91, 227
Osmotic stress, 161

Osmotic stress transcription factor 1, 91

Outer nuclear layer, 303 Ovarian part of testis, 589

Ovary, 345

Oxidative stress, 176, 183, 202, 534, 630

Oxygen consumption, 209

Oyster, 168

Pacific salmon, 148 Paralogs, 334 Parasite, 148 Partial sequencing, 572

Pepsin-like enzymes activity, 275

Pepsinogen C, 275 Perlucin, 354

Perna canaliculus, 251 Perna perna, 293 Peroxiredoxin 1, 108 pH regulation, 477 Phenoloxidase, 501 Phospholipids, 148

Photoperiod clock, 38 Phylogenetic tree, 126 Plankton, 241

Plasma, 236 Plasma metabolites, 324

Platelet aggregation, 572 Polyamines, 622 Polychaete, 202

Porcine, 285 PPARα, 562 PPARγ, 562 PPARgamma, 285 Primary structure, 11

Primate, 74 Processing, 589 Proenzyme, 477 Promoter, 468

Protaetia brevitarsis, 183

Protandry, 29
Protein, 11, 191, 640
ω-3 PUFA, 251
Purification, 83, 362

Quantitative RT-PCR, 334 Quercetin, 314

RACE (Rapid amplification of cDNA ends), 63

Rana grahami, 58

Rapana venosa hemocyanin, 439 Reactive oxygen species, 209 Reactive oxygen species (ROS), 183

Real-time PCR, 552

Receptor, 419
Recombinant fragments, 410
Redox homeostasis, 428

Regulation, 265 Reindeer, 613 Reproduction, 293 Reptile, 11

Reverse transcriptase-polymerase chain

reaction, 63

Rhinolophus ferrumequinum, 388 Rhipicephalus microplus, 599

Rhodopsin, 22 Ribonucleic acid, 63 RNA, 191

Rockfish Sebastes schlegelii, 394

Rodent, 22 ROS, 630 Ruminant, 613

Subject Index

S. aureus binding site, 410 Samia cynthia ricini, 501 Satellite cell, 463 Sea urchin, 401 Season, 613 Seawater acclimation, 47 Senegalese sole, 334 Serine protease inhibitor, 608 Serine proteinase inhibitor, 58 Sex change, 345 Sex differentiation, 29 Sexual selection, 370 Signal transduction, 581 Silkworm, 507 Six3 gene, 303 Skeletal muscle, 101 Snake, 236 Snake venom, 572 SOD-3, 314 Southern blot, 447 Sox11, 345 Spodoptera exigua, 447 Stem-loop structure, 120

Steroid, 126

Steroidogenic enzyme, 29 Stress, 265, 324, 428 Stress resistance, 314 Sulfatide, 161 Sulfoglycolipid, 161 Superoxide dismutase, 534

Tetrahymena, 259
Thermal stress, 552
Thiazide, 63
Thiol-dependent peroxidase activity, 176
Thioredoxin-2, 630
Thrombin inhibitor, 236
Ticks, 557
Tissue distribution, 47
Toad, 608
Transcription factors, 191
Transcripts, 275
Transducin, 22
Transgenic zebrafish, 209
Trypsinogen, 334
α-Tubulin, 259

Turkey, 463

Tyrosine hydroxylase, 501

UCP2, 562 UCP3, 562 UDP-GlcNAc, 215 Upogebia major, 589 Uptake, 314 Urea, 227 Urea transporter, 227

Viperidae, 236 Visual process, 22 Vitellin, 589 Vitellin degradation, 599 Vitellogenin, 541, 589 Vitronectin, 410

Waterfowl, 640 White-spotted flower chafer, 183

Xylophagous larvae, 153, 454

Yolk proteins, 589

AUTHOR INDEX

Vol. 149B, Nos. 1-4

Aitken, L., 477
Akiba, Y., 101
Almeida, D.V., 209
An, K.W., 91
Ando, H., 227
Asensio, E., 334
Aso H 285

Burke, R.D., 477

Calduch-Giner, J.A., 428
Cañavate, J.P., 334
Charles, JF., 419
Chaudhary, A., 191
Cheah, D.M.Y., 251
Chen, H., 468
Chen, J., 388
Chen, K., 176
Chen, X., 265, 447, 468
Chen, Z., 468
Chiba, H., 47
Choi, C.Y., 91, 534
Chovolou, Y., 314
Cohen, A., 540
Conlon, J.M., 120
Corona, S.K., 581
Cramb, G., 63
Cranfield, M.R., 74
Crespo, A., 334
Csaba, G., 259
Cutler, C.P., 63

da Silva Vaz Jr., I., 599 Daffre, S., 599 Daly, K.A., 108, 524 Darboux, I., 419
Dasmahapatra, A.K., 191
Dawson-Coates, J.A., 477
De Zoysa, M., 630
Deane, E., 108
Deane, E.M., 524
Dearborn, D.C., 370
Digby, M.R., 524
Dittus, W., 74
Dojnov, B., 153
Dolashka-Angelova, P., 439
Dolashki, A., 439
Drew, R.E., 552
Dugan, S.G., 265

Enoki, Y., 11

Feng, S., 275, 468
Fernandes Grego, K., 236
Figueiredo, M.A., 209
Fontes, C.F.L., 622
Freites, L., 293
Fujimoto, Y., 507
Fukao, K., 101
Fukushima, H., 378
Funk, V.A., 477
Furriel, R.P.M., 622

Garland Jr., T., 490 Glander, K.E., 74 Goto, M., 227 Goto, Y., 120 Griko, N.B., 581 Guderley, H., 293, 490 Guevara, M., 293 Gui, J.-F., 303

Haddow, J.D., 477
Hagino, A., 285
Han, C.-H., 589
Han, Y., 58
Hara, N., 507
Hashimoto, K., 501
Hatakeyama, M., 589
Hébert Chatelain, É., 202
Heiskari, U., 613
Heredia-Middleton, P., 552
Hincke, M.T., 640
Hodges, L.D., 251
Hristova, R., 439
Huang, F.-L., 541
Husak, V.V., 362

Infante, C., 334 Ishidate, H., 11 Ishizaki, S., 394 Ito, Y., 507 Ivanović, J., 153, 454 Iwai, S., 38 Iwamuro, S., 120

Jennings, N.A., 401 Jin, B.R., 183 Joanisse, D.R., 490 Joshi, P., 410 Juliano, L., 599 Juola, F.A., 370

Kaiser, P., 324 Kalafatis, N., 251 Kalkkinen, N., 572 Kampkötter, A., 314 Kanda, N., 227 Kang, B.J., 589 Kao, C.-M., 541 Kawasaki, H., 120 Kawauchi, H., 47 Khan, I.A., 191 Kikuchi, N., 394 Kim, B.Y., 183 Kim, H.J., 183 Kim, S.J., 630 Kitani, Y., 394 Klasing, K., 540 Kobayashi, Y., 29 Kono, T., 101 Kovács, P., 259 Kwang Wook An, 534

Lai, R., 58, 608 Lanes, C.F.C., 209 Larsson, T., 454 Lawrence, A.L., 401 Leal, A.T., 599 Lee, J., 354, 630 Lee, J.M., 589 Lee, K.S., 183 Lee, Y.-H., 354 Lefévre, C., 108, 524 Lei, T., 468 Lemieux, H., 202 Leone, F.A., 622 Li, W., 275 Li, X., 468 Li, Y., 176

Author Index

Liang, C.-S., 378 Lin, D., 345 Lin, H., 275 Liu, J., 58 Liu, H., 557 Liu, Z., 557 Liu, Z.-y., 83 Lodeiros, C.J., 293 Lu, X., 608 Lushchak, V.I., 362 Lynn, S.G., 126

Ma, D.-M., 303

Ma, G., 345 Ma, Y., 608 Macrides, T.A., 251 Maeda, S., 507 Mahawar, M., 410 Manchado, M., 334 Mantelatto, F.L.M., 622 Manuzzi, M.P., 241 Marins, L.F., 209 Masui, D.C., 622 McFarland, D.C., 463 McGraw, K., 370 McNamara, J.C., 622 Mendoza, J., 293 Miller, K.M., 477 Milligan, L.A., 74 Minashima, T., 285 Mitchell, A.D., 562 Mitico Tanaka-Azevedo, A., 236 Mittapalli, O., 517 Miura, S., 29 Mokas, S., 490 Moles, A., 148 Monserrat, J.M., 209 Montpetit, C.J., 265 Moon, T.W., 265 Morimoto, T., 11 Morishima, I., 501

Moriyama, S., 47

Moussian, B., 215

Mu, R., 176

Nagai, K.-i., 161
Nagashima, Y., 394
Nakamura, M., 29
Nakamura, S., 29
Nakashima, A., 507
Nanri, T., 589
Narváez, M., 293
Nascimento-Silva, M.C.L., 599
Nenadović, V., 153, 454
Nicholas, K., 108
Nicholas, K.R., 524
Nickerson, J.G., 265
Nielsen, P.F., 120
Nieminen, M., 613

Niimura, Y., 161 Nishiki, Y., 101

Oftedal, O.T., 74 Ohga, Y., 11 Ohwada, S., 285 Olafson, R.W., 477 Oliveira, P.L., 599 Opota, O., 419 Ortiz, J.O., 22

Pagliarani, A., 241
Paiva-Silva, G. de O., 599
Pállinger, É., 259
Pastene, L.A., 227
Pauron, D., 419
Peng, Y., 468
Pérez-Sánchez, J., 428
Pesall, J.E., 463
Pezzementi, L., 401
Picman, J., 640
Piferrer, F., 29
Pirini, M., 241
Power, M.L., 74
Proksch, P., 314
Pushpamali, W.A., 630

Raap, M., 477
Ramsay, T.G., 562
Rapoport, S.I., 74
Rees, H.H., 58
Ricklefs, R., 540
Rodríguez-Lanetty, M., 22
Rönnholm, G., 572
Rosa, C.E., 209
Rose, M.T., 285
Ruhl, S., 314

Saarela, S., 613 Saera-Vila, A., 428 Saigusa, M., 589 Saito, H., 589 Salazar, G., 293 Samel, M., 572 Sanosaka, M., 285 Sato, K., 101 Schaufler, L.E., 148 Scofano, H.M., 622 Sehadova, H., 38 Senthil Kumar, N., 447 Seo, S.J., 183 Shen, H., 176 Shepherd, B.S., 126 Shimakura, K., 394 Shin, H.S., 534 Shini, A., 324 Shini, S., 324 Shiomi, K., 394 Shukle, R.H., 517 Siigur, E., 572 Siigur, J., 572

Silva, E.C.C., 622 Singh, M., 251 Sitjà-Bobadilla, A., 428 Smith, D., 477 Sonobe, H., 507 Soppela, P., 613 Sorgine, M.H.F., 599 Stevanovic, S., 439 Storey, K.B., 362 Sun, M., 388 Suzuki, K., 285 Suzuki, T., 168

Takahashi, K., 101
Takahashi, K.G., 168
Takasawa, T., 47
Takeda, M., 38
Tang, B., 447
Thi Dieu Trang, L., 38
Thorgaard, G.H., 552
Tian, H., 447
Timpel, C., 314
Tõnismägi, K., 572
Toyomizu, M., 101
Trombetti, F., 241

Urano, A., 227

Ventrella, V., 241 Vija, H., 572 Voelter, W., 439 Vollenweider, J.J., 148 Vujčić, Z., 153, 454

Wang, D., 477 Wang, N., 354 Wang, Q., 176 Wang, S.-Y., 378 Wang, Z., 83 Warot, S., 419 Watabe, S., 378 Watanabe, K., 285 Wätjen, W., 314 Watts, S.A., 401 Wellman-Labadie, O., 640 Whang, I., 630 Whittier, C.A., 74 Williamson, P., 108, 524 Wright, P.F.A., 251 Wu, J., 608 Wu, M., 191 Wu, X., 557

Xia, T., 468

Wynne, P.M., 251

Yamada, R., 507 Yamaguchi, K., 47 Yamaguchi, T., 285 Yamano, Y., 501 Yamaura, K., 168

Yan Tao, 378
Yang, X., 58
Yang, Z., 468
Yao, Q., 176
Yu, H., 58
Yuan, L., 388

Zhang, G., 394	
Zhang, J., 83	
Zhang, L., 345, 388	
Zhang, S., 388	
Zhang, W., 345, 44°	7
Zhang, X., 581	

4

